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Three new species of *Xylaria* from China

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ABSTRACT —Three new species, *Xylaria semiglobosa*, *X. sphaerica*, and *X. jiangsuensis*, are described. They were discovered in Yunnan, Hainan, and Jiangsu Provinces in China.

KEY WORDS —*Ascomycota,* pyrenomycetous fungi, *Xylariaceae,* taxonomy

Teng (1963) described 51 species and one variety of *Xylaria* from China and Tai (1979) recorded 52 species, one variety, and one form. Ju & Roger (1999) reported 40 species and 1 variety from Taiwan. Since 1979 many new Chinese species and records of *Xylaria* have been published (Li & Li 1994, Xu 1999, Ju & Hsieh 2007, Ma et al. 2011a,b, 2012, 2013, Zhu & Guo 2011, Huang et al. 2014a,b). Three additional new species are now described as follows:

Xylaria semiglobosa G. Huang & L. Guo, **sp. nov.** FIGS 1–3

FUNGAL NAME FN570116

Differs from *Xylaria glebulosa* in its larger stromata and smaller ascospores.

TYPE: China, Yunnan, Mengla, alt. 760 m, on wood, 17.X.2013, G. Huang, L. Guo & W. Li 230 (HMAS 270193, **holotype**).

ETYMOLOGY: The epithet refers to the stromatal shape.

Stromata gregarious or scattered, semiglobose, on narrow central connective, 3–9 mm high, 4–14 mm diam; surface black, finely reticulately cracked, with inconspicuous perithecial mounds; interior white, becoming hollow at maturity. Perithecia subglobose or ellipsoid, 600–900 µm diam; ostioles papillate. Asci with eight ascospores arranged in a uniseriate or partially biseriate manner, cylindrical, overall 212–237 µm long, 9–16 µm broad, the spore-bearing parts

122–132 µm long, with an apical ring staining blue in Melzer's iodine reagent, urn-shaped, 9–10 µm high, 5–8 µm broad. Ascospores dark brown, unicellular, ellipsoid-inequilateral, sometimes pinched at the one end, smooth, (20–) 22–25(–27) × 6–7(–9) µm, with an oblique germ slit much shorter than the spore length.

> ADDITIONAL SPECIMEN EXAMINED: **CHINA**, HAINA. Diaoluoshan Natural Reserve, on wood, 10.XI.2012, S.H. He 201211101 (HMAS 270192).

COMMENTS: *Xylaria semiglobosa* is similar to *X. glebulosa* (Ces.) Y.M. Ju & J.D. Rogers, which differs in having smaller stromata [(1.5–3) mm high, 1–3 mm diam] and larger ascospores (27–31 × 8–10 µm), frequently with abruptly pinched ends (Ju & Rogers 1999). The new species also resembles *X. fraseri* M.A. Whalley et al., which differs in having whitish scales on the stromatal surface, asci with a shorter apical ring (4.5–5 µm high, 3.5–4 µm broad), and ascospores with a straight germ slit (Whalley et al. 2000). *Xylaria semiglobosa* is close to *X. atroglobosa* Hai X. Ma et al., which differs in its asci with shorter apical rings (4.5–5 µm high, 3.5–5 µm broad) and ascospores with a round hyaline non-cellular appendage up to 6–7 × 3–4 µm long (Ma et al. 2012).

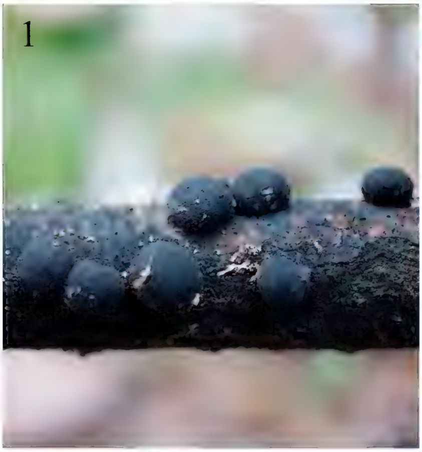
Xylaria sphaerica G. Huang & L. Guo, **sp. nov.** FIGS 4–6

FUNGAL NAME FN570117

> Differs from *Xylaria sicula* f. *major* in its stromata on wood with a small acute sterile apex and long branched protrusion near the base of the head and its slightly larger ascospores.
>
> TYPE: China, Hainan, Bawangling Natural Reserve, alt. 740 m, on wood, 12.XII.2009, Y.F. Zhu & L. Guo 133 (HMAS 270191, **holotype**).
>
> ETYMOLOGY: The epithet refers to the stromatal shape.

Stromata with small acute sterile apex and long branches protruding near the base of the head, 1.3–1.5 cm total length, fertile parts spherical or subsphaeroidal, 1–1.5 mm high, 1–2 mm diam; on tomentose hair-like stipes; surface black, smooth, with perithecial mounds; interior white. Perithecia subglobose or ellipsoid, 540–600 µm diam; ostioles papillate. Asci with eight ascospores arranged in uniseriate manner, cylindrical, 118–128 µm total length, 7–12 µm broad, the spore-bearing parts 75–83 µm long, with an apical ring staining blue in Melzer's iodine reagent, hat-shaped, 4–5 µm high, 3–4 µm broad. Ascospores brown, unicellular, ellipsoid–inequilateral, occasionally pinched at the one end, smooth, (10.5–)12–13(–15) × 5–7 µm, with a straight germ slit the length of the spore.

FIGS 1–6. ***Xylaria semiglobosa*** (HMAS 270193, holotype). 1. Stromata on wood; 2. Section of stroma; 3. Ascus and ascospores. ***Xylaria sphaerica*** (HMAS 270191, holotype). 4. Stromata on wood; 5. Section of stroma; 6. Asci and ascospores.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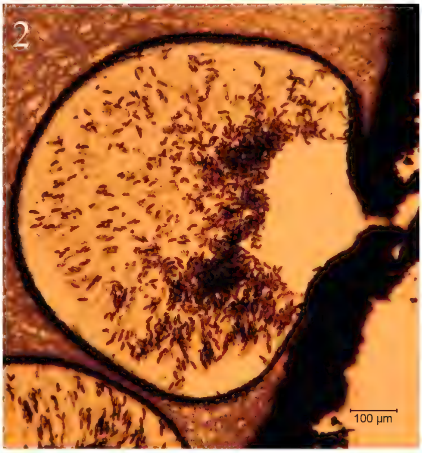
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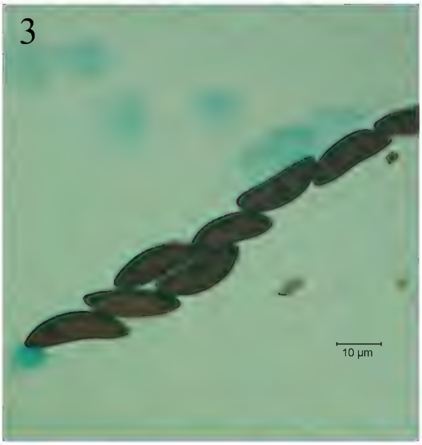
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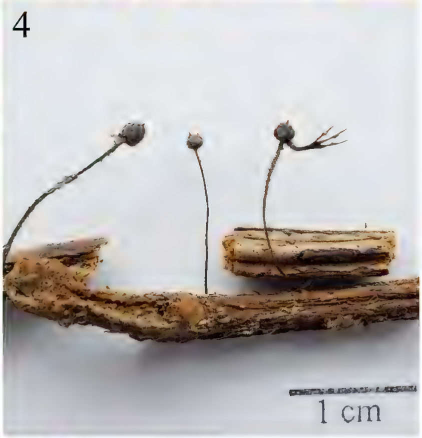
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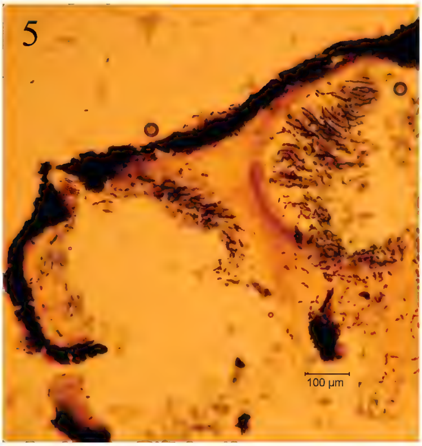
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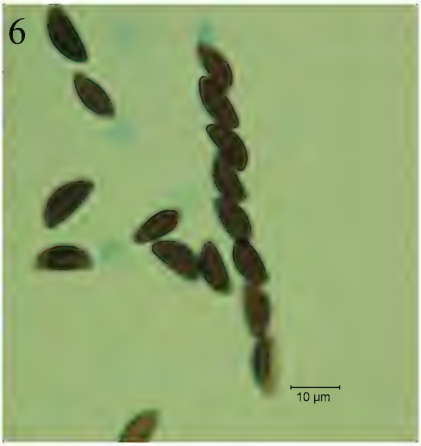
6
10 μm

COMMENTS: *Xylaria sphaerica* is similar to *X. sicula* f. *major* Ciccar., which differs in having stromata on fallen leaves and with a long apex, slightly smaller ascospores (9–12 × 3–6 µm), and the absence of protruding branches near the base of the stromatal head (Ciccarone 1946).

Xylaria jiangsuensis Rui S. Wang & L. Guo, **sp. nov.** FIGS 7–10

FUNGAL NAME FN570118

Differs from *Xylaria filiformis* in its stromata with branched stipes and its larger and fusiform ascospores.

TYPE: China, Jiangsu: Baohuashan, on dead leaves, 10.VI.1932, S.C. Teng 977 (HMAS 7263, **holotype**).

ETYMOLOGY: The epithet refers to Jiangsu Province, where this fungus was first collected.

Stromata filiform, with a sterile apex, 3–7.5 cm total length, 0.5–1 mm diam, fertile parts 3–6 mm long; on hair-like, branched stipes; surface black, smooth, with conspicuous perithecial mounds; interior white. Perithecia globose or subglobose, 450–570 µm diam; ostioles papillate. Asci with eight ascospores arranged in uniseriate manner, cylindrical, the spore-bearing parts 104–110 µm long, 5–7 µm broad, with an apical ring staining blue in Melzer's iodine reagent, inverted hat-shaped, 2–2.5 µm high, 1–1.5 µm broad. Ascospores brownish or brown, unicellular, fusiform-inequilateral, sometimes pinched at the one end, smooth, 16.5–20(–21.5) × 4–5(–6) µm, with straight germ slit the length of the spore.

COMMENTS: *Xylaria jiangsuensis* is similar to *X. filiformis* (Alb. & Schwein.) Fr., which differs in having stromata on unbranched stipes and its ellipsoid-inequilateral and smaller ascospores (11–14 × 5–6 µm; Rogers & Ju 1998).

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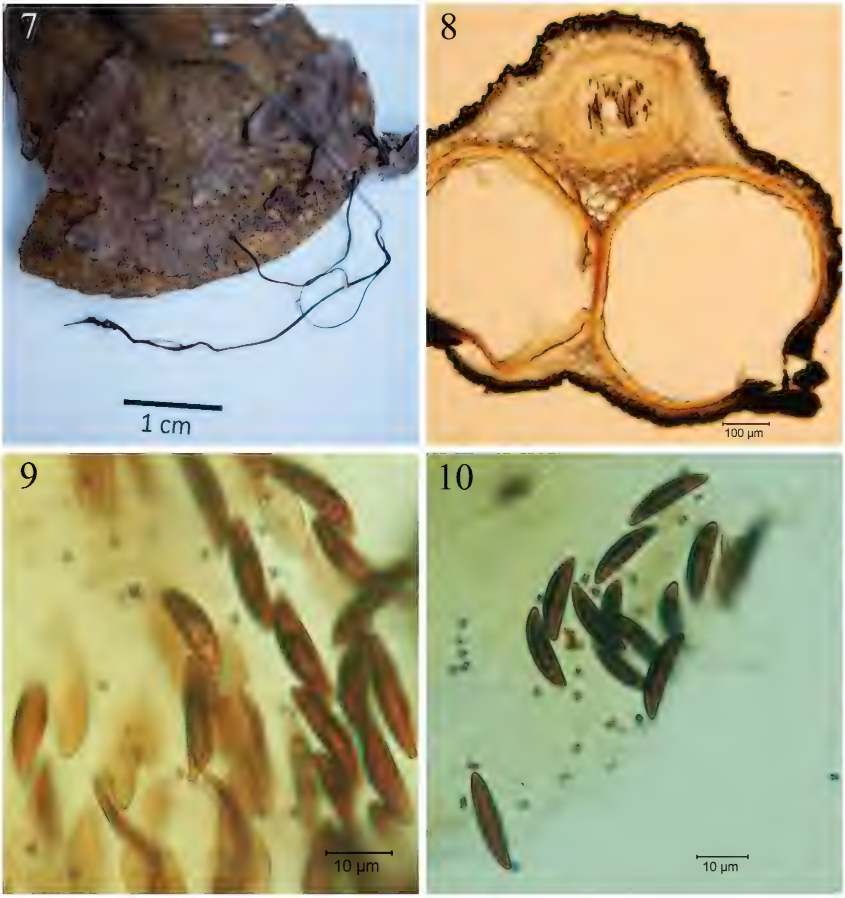

Figs 7–10. ***Xylaria jiangsuensis*** (HMAS 7263, holotype). 7. Stromata on dead leaf; 8. Section of stroma; 9–10. Asci and ascospores.

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